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DEFENDANT'S OPENING CLAIM CONSTRUCTION BRIEF

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Microsoft submits its opening claim construction brief regarding disputed terms from asserted U.S. Patent Nos. 7,266,055 ("the '055 Patent") and 9,612,709 ("the '709 Patent").

The disputed claim limitations from the '709 Patent are textbook examples of means-plus-function limitations under *Williamson*. There is no corresponding structure in the specification for performing their recited functions and the limitations should therefore be deemed indefinite.

The sole disputed term from the '055 Patent ("unipolar magnets") is a nonsensical term covering a scientific impossibility. It cannot be rewritten through claim construction to save the claim's validity, and it should also be deemed indefinite.

#### I. DISPUTED TERMS FOR CONSTRUCTION

### A. U.S. Patent No. 9,612,709

## 1. Term 1: "button setting adjusting unit" (claim 1)

Microsoft's Proposed Construction	TS-Optics' Proposed Construction
Means plus function:	Plain and ordinary
Function: "configured to receive first button setting information and to specify an arrangement and attributes of virtual buttons based on the received first button setting information [and] configured to receive second button setting information."  Structure: No corresponding structure disclosed. Therefore, the limitation is indefinite.	meaning.

The parties' dispute concerns (1) whether Term 1 is a means-plus-function ("MPF") term under 35 U.S.C. § 112(f),<sup>1</sup> and (2) if so, whether there is sufficient structure in the specification for performing the recited function.

The analysis begins with a rebuttable presumption that § 112(f) does not apply

The application leading to the '709 Patent was filed on June 21, 2013 and therefore the post-AIA version of Section 112 applies. *Colt Int'l Clothing Inc. v. Quasar Sci., LLC*, 304 F. Supp. 3d 891, 893 (C.D. Cal. 2018). Because language in § 112(f) is the same as the language in pre-AIA § 112, ¶ 6, cases discussing pre-AIA § 112, ¶ 6 also apply to § 112(f). *See, e.g., CellCast Techs., LLC v. United States*, 150 Fed. Cl. 353, 379 n.5 (2020).

because the claim limitation does not use the word "means." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015). Here, that presumption is overcome because the limitation is drafted with equivalent language for the term "means" ("unit configured to"), and the "term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function." *Id.* Claim 1 recites:

a button setting adjusting unit configured to means for receiv[ing] first button setting information including a mapping relationship between key inputs to the application and associated virtual input messages, and to specif[ing] an arrangement and attributes of virtual buttons based on the received first button setting information;

wherein the button setting adjusting unit is configured to receiv[ing] second button setting information including the dynamically changed virtual message associated with the given key input

Ex. A-1 at claim 1 (annotations added).

This is a perfect example of an MPF limitation under *Williamson*, where a "limitation is drafted in the same format as a traditional means-plus-function limitation, and merely replaces the term 'means' with 'nonce' word 'module,' thereby connoting a generic 'black box' for performing the recited computer-implemented functions." *Williamson*, 792 F.3d at 1350. Here, the limitation is drafted "in a format consistent with traditional [MPF] claim limitations" by replacing the term "means for" with "unit configured to" and then reciting the function performed by the unit, as shown above. *See id*; *Team Worldwide Corp. v. Intex Recreation Corp.*, No. 2020-1975, 2021 WL 4130634, at \*5 (Fed. Cir. Sept. 9, 2021) ("[T]he relevant portions of the claim...are written 'in a format consistent with traditional [MPF] claim limitations' by replacing the term 'means' with 'assembly' and then reciting four functions performed by the assembly."). It is clear that "the word 'unit' does not connote structure and is similar to other terms that [the Federal Circuit] ha[s] held to be nonce terms similar to 'means' and invoke § 112 ¶ 6." *Optis* 

Cellular Tech., LLC v. Apple Inc., 139 F.4th 1363, 1382 (Fed. Cir. 2025).

Indeed, the Manual of Patent Examining Procedure supports this result by identifying "unit" as an exemplary "placeholder[]" often used instead of "means":

The presumption may be overcome if the claim limitation uses a generic placeholder (a term that is simply a substitute for the term "means"). The following is a list of non-structural generic placeholders that may invoke 35 U.S.C. 112(f): "mechanism for," "module for," "device for," "unit for," "component for," "element for," "member for," "apparatus for," "machine for," or "system for."

MPEP, Section 2181 (citations omitted) (emphasis added).

Moreover, Term 1 has no commonly understood meaning to a person of ordinary skill in the art ("POSITA") or established structural meaning. Ex. A ¶ 88. At most, "button setting adjusting unit" as used in the claims and specification provides a generic description of function and never attributes "unit" to a particular structure or group of structures within the description of the invention. *Id.* ¶¶ 88-89. Indeed, the term is referenced with broad, functional language throughout the specification in what appears to be an attempt to capture all possible means of [1] receiving first button settings, [2] specifying an arrangement and attributes of virtual buttons based on received first button setting information, and [3] receiving second button setting information. *See, e.g.*, Ex. A-1 at 5:62-67, 7:8-30.

Williamson is instructive. There, the Federal Circuit determined "distributed learning control module" was an MPF term. 792 F.3d at 1348–54. Although the term did not use the word "means," the Court explained "module" is a nonce word because it did "not provide any indication of structure" but instead "set forth the same black box recitation of structure for providing the same specified function as if the term 'means' had been used." *Id.* at 1350. The Court noted that "module"—like "unit" here—could equally "operate as a substitute for 'means' in the context of § 112, para. 6." *Id.* And adding the "prefix 'distributed learning control' d[id] not impart structure into the term 'module" because, although "portions of the claim did

ATTORNEYS AT LAW LOS ANGELES describe certain inputs and outputs at a very high level," the claim did "not describe how the 'distributed learning control module' interacts with other components ... in a way that might inform the structural character of the limitation-in-question or otherwise impart structure." *Id.* at 1351.

Here, like "module" in *Williamson*, "unit" does not indicate any structure; instead, it amounts to a "black box recitation of structure" for providing the identified functions. *See id.* at 1350. The "button setting adjusting unit" is referenced with broad, functional language throughout the specification in what appears to be an attempt to capture all possible means of "adjusting" "button setting" information. *See, e.g.*, Ex. A-1 at 1:65-2:4, 5:62-66, 7:8-30. Further, just like the prefix "distributed learning control" in *Williamson*, the prefix "button setting adjusting" does not impart structure into the term "unit." Ex. A ¶¶ 87-97; *see Optis*, 139 F.4th at 1382. Thus, "button setting adjusting unit" invokes § 112(f).

Because § 112(f) applies, a two-step process is applied for construction. The first step is to identify the claimed function. *Williamson*, 792 F.3d at 1351. The second step is to determine whether sufficient structure is disclosed in the specification that corresponds to the claimed function. *Id.* If adequate corresponding structure is not disclosed, then the claim is indefinite. *Id.* at 1352.

For step one, the function of the "button setting adjusting unit" is [1] receiving first button setting information, [2] specifying an arrangement and attributes of virtual buttons based on the received first button setting information, and [3] receiving second button setting information, as shown by the claim language:

...a button setting adjusting unit configured to receive first button setting information including a mapping relationship between key inputs to the application and associated virtual input messages, and to specify an arrangement and attributes of virtual buttons based on the received first button setting information;

• • •

wherein the button setting adjusting unit is configured to receive second button setting information including the dynamically changed

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Ex. A-1 at claim 1. This function is confirmed by the specification, which similarly discusses the function of the "button setting adjusting unit" as receiving "button setting information" (*id.* at 7:8-10) and "generat[ing] the virtual button setting information" (*id.* at 7:13-15).

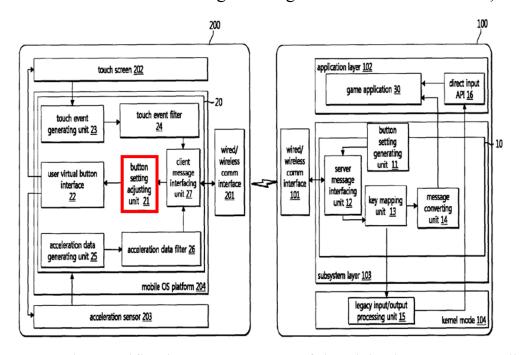
In the second step, there is insufficient structure corresponding to the claimed function.<sup>2</sup> "Structure disclosed in the specification qualifies as 'corresponding structure' if the intrinsic evidence clearly links or associates that structure to the function recited in the claim." *Williamson*, 792 F.3d at 1352 (citation omitted). "Even if the specification discloses corresponding structure, the disclosure must be of 'adequate' corresponding structure to achieve the claimed function." *Id.* (citation omitted). If a POSITA "would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim," then the term is indefinite. *Id.* (citation omitted).

Here, there is insufficient structure to achieve the claimed function. For example, the specification refers to "a button setting adjusting unit 21" in Figure 1. As annotated below, "button setting adjusting unit 21" in Figure 1 is a single black box with the term's name. Ex. A-1 at Fig. 1 (annotated).

Like the claim limitation, the box in the figure is a literal "black box' [here highlighted in red] for performing the recited computer-implemented functions." *See Williamson*, 792 F.3d at 1350; *Fortinet, Inc. v. Forescout Techs., Inc.*, No. 20-CV-03343, 2022 WL 17254313, at \*9 (N.D. Cal. Nov. 28, 2022) (finding "Earmark Provisioning Module" to be MPF term that was indefinite for failure to disclose a structure corresponding to the claimed function where, *inter alia*, specification "refers to the 'mark provisioning method' in a single black box in a figure"); *Med.* 

ATTORNEYS AT LAW LOS ANGELES <sup>&</sup>lt;sup>2</sup> The initial inquiry into whether the rebuttal presumption is overcome because the claim term fails to recite sufficiently definite structure is distinct from but "may be similar to looking for corresponding structure in the specification" for this second step. *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1296–97 (Fed. Cir. 2014), abrogated on other grounds by Williamson, 792 F.3d 1339 (citations omitted).

Instrumentation & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1213 (Fed. Cir. 2003) ("Because the figure does not describe structure at all, and there is no indication that one skilled in the art would understand it to do anything other than list the steps of the method, it cannot serve to clearly link software as a corresponding structure for the function of converting the images into a selected format.").



Moreover, the specification repeats some of the claim language regarding the "button setting adjusting unit" in narrative form, Ex. A ¶¶ 90-91, 96, but it "does not detail" what a button setting adjusting unit "consists of or how it operates." *Synchronoss Techs., Inc. v. Dropbox, Inc.*, 987 F.3d 1358, 1367 (Fed. Cir. 2021). Thus, POSITA would be unable to recognize any structure in the specification and associate it with the corresponding function. Ex. A ¶¶ 95-97.

Because the specification does not disclose what structure is claimed, a POSITA could not ascertain the scope with reasonable certainty, and the claim is invalid as indefinite. *Lufthansa Technik AG v. Astronics Advanced Elec. Sys. Corp.*, 711 F. App'x 638, 642 (Fed. Cir. 2017).

# 2. Term 2: "client message interfacing unit" (claims 1 & 2)

1	Microsoft's Proposed Construction	TS-Optics' Proposed Construction
2	Means plus function:	Plain and ordinary meaning
3	<u>Function</u> : "configured to convert the touch input message into a virtual input message in a form recognized by the virtual controller server, and to	
4	recognized by the virtual controller server, and to output, to the virtual controller server, the	
5	message." In claim 2, the recited function also	
6	includes "to convert the touch input message or the movement input message into a virtual input	
7	the movement input message into a virtual input message in a form recognized by the virtual controller server."	
8	Structure: No corresponding structure disclosed. Therefore, the limitation is indefinite.	
9		

Like Term 1, Term 2 is indefinite because it is an MPF term that lacks sufficient structure corresponding to the function.<sup>3</sup> Although the claim limitation does not use the word "means," the presumption that § 112(f) does not apply is overcome because the term "fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.""

Williamson, 792 F.3d at 1348. As to function specifically, claim 1 recites:

a client message interfacing unit configured to convert the touch input message into a virtual input message in a form recognized by the virtual controller server, and to output, to the virtual controller server, the converted touch input message as the virtual input message...

Ex. A-1 at claim 1 (emphasis added). And dependent claim 2 further recites:

the client message interfacing unit operable to convert the touch input message or the movement input message into a virtual input message in a form recognized by the virtual controller server.

*Id.* at claim 2 (emphasis added).

The claims do not recite any structure for performing these functions. Rather, the format is "consistent with traditional [MPF] claim limitations" by merely replacing the term "means for" with "unit configured to" or "unit operable to" and then reciting the functions to be performed by the unit. *Williamson*, 792 F.3d at 1350;

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<sup>&</sup>lt;sup>3</sup> Because the analysis is very similar for all MPF terms at issue from the '709 Patent, treatment for this and the remaining terms will be progressively abbreviated.

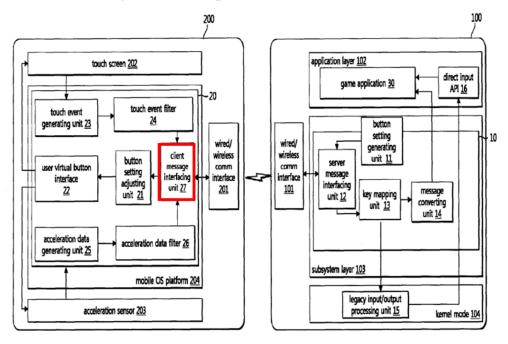
Team Worldwide, 2021 WL 4130634, at \*5. Again, the term "unit" is akin to other terms that the Federal Circuit has held to be nonce terms similar to "means" and thereby invoke § 112(f). *Optis*, 139 F.4th at 1382. There is no commonly understood meaning of "client message interfacing" to a POSITA, and there is no known structural meaning in the art. Ex. A ¶¶ 139-140.

Reciting "client message interfacing" as a prefix does not impart structure into the term "unit" or inform its nature. *Id.* ¶ 141; *Williamson*, 792 F.3d at 1350-51. The prefix is functional, conveying only that the "unit" is for "interfacing" with a "client message." *See Optis* at 1382.

Also telling is the specification's reference to Term 2 with broad, functional language to capture *any* means of [1] converting the touch input message into a virtual input message in a form recognized by the virtual controller server, [2] outputting, to the virtual controller server, the converted touch input message as the virtual input message, and [3] converting the touch input message or movement input message into a virtual input message in a form recognized by the virtual controller server. *Compare* Ex. A-1 at claims 1 & 2, *with id.* at 8:14-19 ("The client interfacing unit 27 converts the touch input message or the movement input message into a virtual input message in a form that can be acknowledged by the virtual controller server 10, and transmits the virtual input message to the personal computer 100 via the wired/wireless communication interface 201."), *and id.* at 2:15-19, 2:29-33 (repeating claim language). Thus, Term 2 fails to recite sufficiently definite structure, and the claim term invokes § 112(f). *Williamson*, 792 F.3d at 1348.

Because the claim term invokes § 112(f), it must be construed as a MPF term. *Id.* at 1351. For the first step, the function is [1] converting the touch input message into a virtual input message in a form recognized by the virtual controller server, [2] outputting, to the virtual controller server, the converted touch input message as the virtual input message, and [3] converting the touch input message or the movement input message into a virtual input message in a form recognized by the virtual

For the second step, the specification does not disclose structure corresponding to the claimed function. The sparse references to "client message interfacing unit" in the specification say nothing about any structural components or algorithm. Instead, the specification repeats language identical or similar to the functional language in the claims without identifying what a "client message interfacing unit" actually *is*. The specification also refers to "client message interfacing unit" as item 27, which is seen in Figure 1 and reproduced below.



As shown, the "client message interfacing unit 27" is a black box without more. See Ex. A ¶ 144. Because the figure provides no structure and a POSITA would not understand it to do anything other than provide a "conceptual diagram" (id. at 4:30-33), it cannot serve to identify (let alone clearly link) corresponding structure for the function. Med. Instrumentation, 344 F.3d at 1213.

There is no structure for performing the recited function, and therefore the claims are indefinite. *Williamson*, 792 F.3d at 1351-52; Ex. A ¶¶ 146-149.

3. Term 3: "touch event filter" (claim 1)

Microsoft's Proposed Construction	TS-Optics' Proposed Construction
Means plus function:	Plain and ordinary
<u>Function</u> : "configured to generate touch input messages recognized as key input by the application, based on touch event objects that are generated from touch signals, of the touch regions corresponding to the virtual buttons, among touch signals input by the touch screen."	meaning
Structure: No corresponding structure disclosed. Therefore, the limitation is indefinite.	

Term 3 is indefinite because it is an MPF term that lacks sufficient structure in the specification corresponding to its recited function. As with Terms 1 and 2, the presumption based on lack of the word "means" is overcome because the term "fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function." *Williamson*, 792 F.3d at 1348. As shown by the claim language (below), a "touch event filter" is described in the claim by what it does (*i.e.*, "generat[ing] touch input messages recognized as key input by the application…") without ever reciting a structure for performing that function.

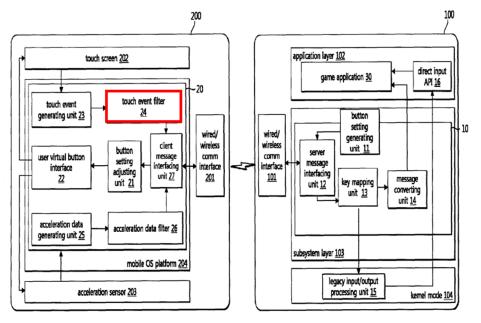
**a touch event filter** configured to generate touch input messages recognized as key input by the application, based on touch event objects that are generated from touch signals, of the touch regions corresponding to the virtual buttons, among touch signals input by the touch screen; and

Ex. A-1 at claim 1 (emphasis added). The language "filter configured to" is easily swapped with "means for" in the limitation, confirming that its format is "consistent with traditional [MPF] claim limitations." *Williamson*, 792 F.3d at 1350; *Team Worldwide*, 2021 WL 4130634, at \*5.

Moreover, there is no commonly understood meaning of "touch event filter" to a POSITA, and it has no known structural meaning in the art. Ex. A ¶¶ 121-122. For example, the term does not identify what type of "filter" could be intended, and the only thing that the term communicates to a POSITA "is the intended result—filtering or selecting certain touch events from a stream of inputs." *Id.* ¶¶ 123-125.

And the specification uses the same broad, functional language as the claim when mentioning the "touch event filter," Ex. A-1 at 2:9-14, 7:63-8:3, or provides no description at all, id. at 5:64-65. Thus, the term invokes § 112(f). Ex. A ¶¶ 118-130.

For the first step in construction, claim 1's recited function for the "touch event filter" is "generat[ing] touch input messages recognized as key input by the application, based on touch event objects that are generated from touch signals, of the touch regions corresponding to the virtual buttons, among touch signals input by the touch screen." Ex. A-1 at claim 1. For the second step, the patent does not disclose sufficient structure. The specification uses the same functional language as the claim. *Id.* at 2:9-14, 7:63-8:3. The specification says nothing about any structural attributes of a "touch event filter." Instead, it repeats language identical or similar to the functional language in the claim. Item 24 in Figure 1 is identified as the "touch event filter" (below) but it is a single black box without any detail. Ex. A ¶ 128.



Because there is no structure in the specification linked or associated with the function, the claim is indefinite. Ex. A  $\P$  130-133.

4. Term 4: "user virtual button interface" (claim 1 and 2)

Microsoft's Proposed Construction	TS-Optics' Proposed Construction
Means plus function:	Plain and ordinary meaning.

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Microsoft's Proposed Construction	TS-Optics' Proposed Construction
Function: "configured to generate a first virtual button screen based on the first button setting information and to display the first virtual button screen on a touch screen display device of the mobile terminal [and] in response to an occurrence of the event in the application, configured to generate and display, on the touch screen display device of the mobile terminal, a second virtual button screen based on the second button information."	
In claim 2 the recited function also includes "activat[ing] an acceleration sensor of the mobile terminal to enable a detection of movements of the mobile terminal."	
Structure: No corresponding structure disclosed. Therefore, the limitation is indefinite.	

Term 4 is indefinite because it is an MPF term that lacks sufficient structure in the specification corresponding to its recited function.

The presumption that § 112(f) does not apply is overcome because the term "fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function." *Williamson*, 792 F.3d at 1348. Claims 1 and 2 recite three functions: (1) "generat[ing] a first virtual button screen based on the first button setting information in which touch regions corresponding to the virtual buttons are visually displayed" (claim 1); (2) "display[ing] the first virtual button screen on a touch screen display device of the mobile terminal" (claim 1); and (3) "activat[ing] an acceleration sensor of the mobile terminal to enable a detection of movements of the mobile terminal" (claim 2).

Nothing provides structure that performs the recited function. Ex. A ¶¶ 98-114. The term "user virtual button interface" appears only a handful of times in the specification. In each instance, the specification restates the claim language verbatim (Ex. A-1 at 2:4-8, 2:20-23), mentions the term without any description (id. at 5:62-67), or uses language substantively the same as the claim language (id. at 7:31-36 ("The user virtual button interface 22 generates a virtual button screen on which

touch regions corresponding to virtual buttons are visually displayed in accordance with the virtual button setting information, displays the virtual button screen on the touch screen 202, and activates the acceleration sensor 203 corresponding to the virtual buttons.")). Thus, the term is a "generic 'black box" for performing the recited functions, and it invokes § 112(f). *Williamson*, 792 F.3d at 1350.

However, the specification fails to disclose structure corresponding to the three functions. Ex. A ¶¶ 110-117. As discussed *supra*, in the limited instances that the specification mentions "user virtual button interface," it offers no guidance about its structure. *Id.* ¶¶ 110-117. For example, Figure 1 shows the "user virtual button interface 22" as a black box—i.e., nothing describes the details of its structure. *Id.* ¶ 113. Thus, this term is indefinite. *See id.* ¶¶ 98-117.

## 5. Term 5: "acceleration data filter" (claim 2)

Microsoft's Proposed Construction	TS-Optics' Proposed Construction
Means plus function:	Plain and ordinary meaning
Function: "configured to generate a movement input message that is mapped to a key input of the application, based on acceleration data that is generated based on an acceleration signal generated by the acceleration sensor."	
Structure: No corresponding structure disclosed. Therefore, the limitation is indefinite.	

Term 5 fares no better. It is indefinite because it is an MPF term that lacks sufficient structure corresponding to the function.

Term 5 invokes § 112(f) because, although it does not use the word "means," it "fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function." *Williamson*, 792 F.3d at 1348. Specifically, the recited function is "generat[ing] a movement input message that is mapped to a key input of the application, based on acceleration data that is generated based on an acceleration signal generated by the acceleration sensor." Ex. A-1 at claim 2. However, nothing provides structure for performing the recited

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ATTORNEYS AT LAW LOS ANGELES function. Ex. A ¶¶ 169-182. Any mention of the term provides no description at all or merely states its function. *See, e.g., id.* at 5:62-67 ("the virtual controller 20 may include...an acceleration data filter 26"), 8:9-12 ("The acceleration data filter 26 may generate a movement input message that can be finally recognized as a key input by the game application 30 based on the valid acceleration data.").

Another, non-descript black box in a "conceptual diagram" (*id.* at 4:30-33) appears in Figure 1, but nothing in the figure reveals the structure of "acceleration data filter 26." *See XR Commc'ns, LLC v. ARRIS Sols., Inc.*, No. 2022-1125, 2023 WL 3529830, at \*3 (Fed. Cir. May 18, 2023) (agreeing with district court "that the specification's failure to disclose adequate corresponding structure renders the claims at issue indefinite" where, *inter alia*, showing "search receiver 164" in Figure 18—which was described as a "functional block diagram for an exemplary scheduling capability"—did not "reveal[] the structure of 'search receiver 164"). As described above, the specification only refers to the "acceleration data filter" in passing or repeats the claim language without any structure. Thus, because the term "fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function," *Williamson*, 792 F.3d at 1348, the presumption that § 112(f) does not apply is overcome.

In construing the term, the specification fails to disclose structure corresponding to the recited function. As discussed *supra*, the specification only uses the functional language and offers no guidance about structure. Ex. A ¶¶ 172-185. For example, Figure 1 shows the "acceleration data filter 26" as a black box, and the specification provides no further detail on what the "acceleration data filter" is, how it operates, or how it performs the claimed filtering function. *Id.* ¶¶ 179-180. Thus, the term is indefinite. *See id.* ¶¶ 169-185.

6. Term 6: "virtual controller server" (claims 1, 2, 4, 8)

Microsoft's Proposed Construction	TS-Optics' Proposed Construction
Means plus function:	Plain and ordinary meaning

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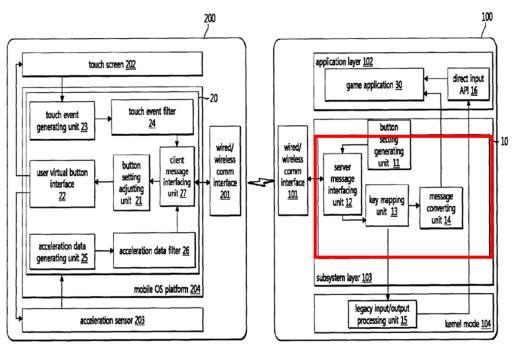
Microsoft's Proposed Construction	TS-Optics' Proposed Construction
<u>Function</u> : "configured to remotely communicate with a virtual controller client running on a remote	
mobile terminal"	
Structure: No corresponding structure disclosed. Therefore, the limitation is indefinite.	
Term 6 is similarly indefinite because it is an	MPF term that lacks sufficient

Term 6 is similarly indefinite because it is an MPF term that lacks sufficient structure corresponding to the function.

The presumption that § 112(f) does not apply is overcome. *Williamson*, 792 F.3d at 1348. Claim 4 recites the function of "virtual controller server" as "remotely communicat[ing] with a virtual controller client running on a remote mobile terminal including a touch screen display device for remote key input on an application running on the computer." Ex. A-1 at claim 4. However, nothing in the claims or the specification provides sufficiently definite structure for "virtual controller server" that performs the recited function. Ex. A ¶¶ 153-165. For example, most times that the term appears in the specification, it is in connection with broad, functional language that parrots the functional language from the claims. *E.g.*, Ex. A-1 at 1:62-63, 2:16-19, 2:32-40, 3:1-8, 3:21-24, 3:33-37, 3:46-51, 3:63-67, 4:10-22, 5:4-7, 5:14-23, 5:30-37, 6:1-6, 6:13-22, 6:29-40, 6:65-7:2, 7:11-19, 8:13-19.

Elsewhere, the term is mentioned in connection with Figures 1 and 3. *E.g.*, *id.* at 4:30-34, 4:38-42, 4:58-67, 8:65-9:16, 9:33-47. However, neither figure provides any indication of structure. Ex. A ¶¶ 161-164. Figure 1 (annotated below) is a "conceptual diagram" that shows virtual control server 10 as a black box including the button setting generating unit 11 (at least part of it), server message interfacing unit 12, key mapping unit 13, and message converting unit 14. The figure provides no description of structure—just black boxes. *See, e.g., Fiber, LLC v. Ciena Corp.*, 792 F. App'x 789, 795–96 (Fed. Cir. 2019) (affirming that "control" was indefinite under § 112(6) where patent only disclosed black box labelled "control" without any description of structure); *XR Commc 'ns, LLC v. Ruckus Wireless, Inc.*, No. 18-CV-

ATTORNEYS AT LAW LOS ANGELES 01992, 2021 WL 3918136, at \*13 (N.D. Cal. Sept. 1, 2021) ("Even though the routing information is shown by the arrow coming out of 'search receive 164,' Figure 18 does not show the structure of the search receiver itself that outputted the updated routing information. Instead, it is simply a black box depiction that is not clearly linked to structure for performing the claimed functions."). If anything, Figure 1 compounds the indefiniteness because the virtual controller server's black box interrupts and obscures the button setting generating unit black box, causing the button setting generating unit to cross a functional boundary. This ambiguous mapping renders the relationships between the boxes unclear. The specification does not clarify this arrangement or resolve the ambiguity, leaving the claim term devoid of structural support. Ex. A ¶ 155; see id. ¶ 162.



Similarly, Figure 3 is a "flowchart illustrating a remote controller interfacing method using a virtual controller client implemented on a mobile terminal and a virtual controller server implemented on a personal computer according to an embodiment of the present invention." *Id.* at 4:38-42. However, "the figure does not describe structure at all, and there is no indication that one skilled in the art would understand it to do anything other than list the steps of the method." *Med.* 

*Instrumentation*, 344 F.3d at 1213.

As such, the term is merely a "generic 'black box" for performing the recited functions, and it invokes § 112(f). *Williamson*, 792 F.3d at 1348. As set forth above, the specification discloses no structure corresponding to the claimed function and the term is therefore invalid as indefinite. *Id.* at 1351-52; Ex. A ¶¶ 153-168.

7. Term 7: "button setting generating unit" (claim 4)

Microsoft's Proposed Construction	TS-Optics' Proposed Construction
Means plus function:	Plain and ordinary meaning
Function: "configured to generate and transmit, to the virtual controller client, first button setting information including a mapping relationship between key inputs to the application and associated virtual input messages[and] is further configured to, in response to an occurrence of the event in the application, generate and transmit, to the virtual controller client, second button setting information including the dynamically changed virtual input message associated with the given key input."  Structure: No corresponding structure disclosed. Therefore, the limitation is indefinite.	

Like the preceding terms, Term 7 is indefinite because it is an MPF term under § 112(f) that lacks sufficient structure corresponding to its recited function.

The presumption against invoking § 112(f) is overcome because the term recites "function without reciting sufficient structure for performing that function." Williamson, 792 F.3d at 1348. The recited function is (1) "generat[ing] and transmit[ting], to the virtual controller client, first button setting information including a mapping relationship between key inputs to the application and associated virtual input messages," and (2) "in response to an occurrence of the event in the application, generat[ing] and transmit[ting], to the virtual controller client, second button setting information including the dynamically changed virtual input message associated with the given key input." Ex. A-1 at claim 4; Ex. A ¶ 187-188.

Nothing in the claims or the specification provides structure for performing the recited function. Ex. A  $\P\P$  189-197. The specification discusses the "button setting

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generating unit" in broad, functional terms that tracks the functional language in the claim. *E.g.*, Ex. A-1 at 7:3-7 ("The button setting generating unit 11 transfers the button setting information to the server message interfacing unit..."), 8:24-28 ("The key mapping unit 13 may identify the key input value...based on the button setting information previously set by the button setting generating unit 11.").

Moreover, as Dr. Barrett explains (Ex. A ¶ 189-190), a POSITA would not understand "unit" alone or with "button setting generating" to have an understood meaning or connote structure. *Williamson*, 792 F.3d at 1349, 1351. Nor would a POSITA understand it to refer to any particular class of known structures or components. Ex. A ¶ 189. Thus, there no sufficiently definite structure recited, and the term invokes § 112(f). *Williamson*, 792 F.3d at 1348.

As to construction, there is no structure to perform the claimed function. Ex. A ¶¶ 198-200. For example, Figure 1 shows "key mapping unit 13" as a black box with no suggestion of structure, and nowhere does the specification elsewhere provide that detail. Ex. A ¶¶ 189-200. Thus, the term is indefinite.

8. Term 8: "server message interfacing unit" (claims 4 and 5)

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Microsoft's Proposed Construction	TS-Optics' Proposed Construction	
Means plus function:	Plain and ordinary meaning	
Function: "configured to transmit a setting message including the first button setting information to the virtual controller client, and to receive a virtual input message from the virtual controller client, the virtual input message being generated based on a touch on the touch screen display device of the mobile terminal [and] operable to receive a virtual input message generated based on a movement of the mobile terminal."		
Structure: No corresponding structure disclosed. Therefore, the limitation is indefinite.		

Like the prior terms, Term 8 is indefinite because it is an MPF term under § 112(f) lacking structure corresponding to its function.

The presumption that § 112(f) does not apply is overcome because nothing in

the claims or specification provides sufficiently definite structure for Term 8 that performs the functions specified by the claims: (1) "transmit[ting] a setting message including the first button setting information to the virtual controller client, and to receive a virtual input message from the virtual controller client" (claim 4), and (2) "receiv[ing] a virtual input message generated based on a movement of the mobile terminal" (claim 5). The claims do not identify any structure or structural attributes for "server message interfacing unit," and the specification only refers to it in broad, functional terms. See Ex. A ¶¶ 201-213; Ex. A-1 at 7:3-7 ("The button setting generating unit 11 transfers the button setting information to the server message interfacing unit 12, and the server message interfacing unit 12 in tern transmits the button setting information to the mobile terminal 200 via the wired/wireless communication interface 101."), 8:20-23 ("The virtual input message received by the wired/wireless communication interface 101 of the personal computer 100 is transferred to the key mapping unit 13 via the server message interfacing unit 12."). In other words, "unit configured to" acts just like "means for" in a traditional [MPF] format. Williamson, 792 F.3d at 1350.

As to construction of the MPF term, the specification fails to disclose clearly linked and adequate structure corresponding to the two functions of the claimed "server message interfacing unit." Ex. A ¶¶ 214-216. As discussed above, the specification's sparse references to the term offers no guidance about its structure. *Id.* ¶¶ 204-213. For example, Figure 1 shows the "server message interfacing unit 12" as a black box with no details of its structure, and there is nothing else from which a POSITA would find structure corresponding to the claimed function. *See id.* Thus, the term is indefinite. *Williamson*, 792 F.3d at 1351-52; Ex. A ¶¶ 201-216.

9. Term 9: "key mapping unit" (claims 4, 6, 7)

Microsoft's Proposed Construction	TS-Optics' Proposed Construction
Means plus function	Plain and ordinary meaning
<u>Function</u> : "configured to identify a key input value mapped to the received virtual input	

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Microsoft's Proposed Construction	TS-Optics' Proposed Construction
message based on the first button setting information [and] further configured to identify the key input value mapped to the dynamically changed virtual input message based on the second button setting information." Additionally, the recited function may include "transfer[ing] a key input value to the application via a message transfer architecture of an operating system that runs the application on the computer" and/or "transfer[ing] a key input value to the application via an input and output application programming interface (API) of an operating system that runs the application on the computer."  Structure: No corresponding structure disclosed. Therefore, the limitation is indefinite.	

Term 9 is another example of the indefinite "unit" terms. As with the others (i.e., Terms 1, 2, 7, and 8), this term is indefinite because it is an MPF term under § 112(f) that lacks sufficient structure corresponding to its recited function.

Neither the claims nor the specification provides structure for "key mapping" unit." The recited functions are: (1) "identify[ing] a key input value mapped to the received virtual input message based on the first button setting information" (claim 4); (2) "identify[ing] the key input value mapped to the dynamically changed virtual input message based on the second button setting information" (claim 4); (3) "transfer[ring] a key input value to the application via a message transfer architecture of an operating system that runs the application on the computer" (claim 6); and (4) "transfer[ring] a key input value to the application via an input and output application programming interface (API) of an operating system that runs the application on the computer" (claim 7). The claims do not identify any structure. Ex. A ¶¶ 218-219. Nor does the specification, which restates the functions in the claims either identically or substantively the same. Id. ¶¶ 220-227; Ex. A-1 at 2:51-53, 2:59-65, 8:20-28. Figure 1 shows the "key mapping unit 13" as a black box with no details of its structure. Therefore, the term is invalid as indefinite. Ex. A ¶¶ 217-230.

#### Term 10: "virtual controller client" (claims 1, 2, 3, 4) 10.

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Microsoft's Proposed Construction	TS-Optics' Proposed Construction
Means plus function	Plain and ordinary meaning
<u>Function</u> : "configured to remotely communicate with a virtual controller server running on a computer for remote key input to an application running on the computer"	
Structure: No corresponding structure disclosed. Therefore, the limitation is indefinite.	

Term 10 is indefinite for the same reason as the preceding terms. See Ex. A ¶¶ 68-83. The presumption against § 112(f) is overcome because the patent "fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function." Williamson, 792 F.3d at 1348. The recited function is "remotely communicat[ing] with a virtual controller server running on a computer for remote key input to an application running on the computer." Ex. A-1 at claim 1. The word "client" here does connote sufficient structure. Ex. A ¶ 72. Moreover, the prefix "virtual controller" is functional, id. ¶ 73, failing to supply sufficient structure. Williamson, 792 F.3d at 1351.

That the "virtual controller client" comprises other "units," "interfaces," or "filters" does not change the outcome. Although the claim may describe what the "virtual controller client" comprises at a high level, the claim does not describe how "virtual controller client" "interacts with other components...in a way that might inform the structural character of the limitation-in-question or otherwise impart structure" to the "virtual controller client." Optis, 139 F.4th at 1383 (quoting Williamson, 792 F.3d at 1351). There is nothing to show how the "virtual controller client" purportedly operates—no algorithms and no structure. See id.

Any reference to "virtual controller client" in the specification is coupled with functional language that parrots the language found in the claim, Ex. A-1 at 1:58-64, 2:23-25, 2:37-39, 2:46-50, 3:5-10, 3:26-30, 3:41-62, 4:5-14, 5:23-29, 5:44-67,6:1-6, 6:13-15, 6:32-44, 6:65-7:2, 7:11-19, 8:24-28, 8:43-47, or is provided in connection with Figures 1 and 3, id. at 4:30-33, 4:38-42, 4:58-67, 8:65-9:42—which are

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insufficient for the same reasons discussed supra for the previous terms.

Because there is no structure in the specification linked or associated with the function, the MPF term is invalid as indefinite. *Williamson*, 792 F.3d at 1351-52; Ex. A ¶¶ 68-83.

## B. U.S. Patent No. 7,266,055

## 1. Term 1: "facing each other" (claim 1)

The parties have agreed that this term should be construed as "disposed opposite each other." *See* Ex. B, 2025-08-08 Email from A. Weiss.

## 2. Term 2: "unipolar magnets" (claim 40)

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Microsoft's Proposed Construction	TS-Optics' Proposed Construction
indefiniteness based on 35 U.S.C. § 112	Plain and ordinary meaning, which is "magnets that each have a face with a single pole"

The term "unipolar magnets" is indefinite because the claims, read in light of the intrinsic evidence, fail to inform, with reasonable certainty, a POSITA about the scope of the claimed invention. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). "One circumstance in which claims are indefinite is where the claims, as properly construed, are nonsensical." *WSOU Invs. LLC v. Google LLC*, No. 2022-1066, 2023 WL 6210607, at \*7 (Fed. Cir. Sept. 25, 2023); *Trs. of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1367 (Fed. Cir. 2016) ("The claims are nonsensical in the way a claim to extracting orange juice from apples would be, and are thus indefinite." (internal citation omitted)). Another circumstance is where the claim would "require an impossibility." *Synchronoss Techs., Inc. v. Dropbox, Inc.*, 987 F.3d 1358, 1366–67 (Fed. Cir. 2021). After all, claim construction must be "firmly anchored in reality by the understanding of those of ordinary skill in the art." *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1365 (Fed. Cir. 1999).

Here, "a POSITA would not understand with reasonable certainty whether there is such a thing as a 'unipolar magnet,' and if so, what constitutes a magnet that is 'unipolar.'" Ex. A  $\P$  56. In fact, "a POSITA would understand that there is no

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proof that a 'unipolar magnet' actually exists." *Id.* ¶ 58. Dr. Barrett has explained:

As a POSITA would understand, there is and has been a state of controversy and skepticism in the scientific and engineering communities as to what this term actually implies, if such magnetics can be made, and if one claims such a device, then how, in particular it was constructed. Specifically, it is well understood in the field of magnetism that magnets are bipolar in that they possess a north and south pole. Yet the concept of a "unipolar magnet" would mean it only has a single pole. As the literature confirms, the notion of a "unipolar magnet" is indeed a mere notion that is theoretical. In particular, "no one has observed" a magnetic monopole, and "the absence of monopoles is significant." Similarly, Professor Arttu Rajantie also states that "magnets always have two poles—north and south" and, magnetic monopoles only "exist in principle." As Professor Arttu Rajantie explains, "in practice they cannot be present in the universe today" and there is no confirmation regarding "the existence of real magnetic monopoles."

Id.  $\P$  58 (citations omitted); see id.  $\P\P$  57-66.

Moreover, "[t]he only physical incarnation of a *pseudo*-monopole magnetic (i.e., not an actual monopole magnetic) that has been developed for use in engineering devices consists of a collection of dipole magnets arranged such that one common pole is forced into a central position, leaving the other pole facing outwards[.]" Id. ¶ 60. But "[s]uch a pseudo-monopole magnet's functionality is questionable at best," and "[t]here is nothing in the specification or the claims that indicate the applicants intended to claim a pseudo-monopole magnetic, which further clouds the scope of the term." Id. ¶ 61.

No other intrinsic evidence clarifies the scope for a POSITA. For example, the specification states that "the pair of magnets 180 shown in FIGS. 4 and 5 are disposed opposite to each other in a Y direction (second direction), and are unipolar and magnetized with an N pole." Ex. A-2 at 6:29-32. It further states that, "[a]lternatively, the magnets 180 are unipolar and magnetized with a S pole according to another aspect of the invention." *Id.* at 6:32-34. Similarly, Figure 5 shows the magnet only has a north pole, and "[t]he geometry of the magnetics shown

ATTORNEYS AT LAW LOS ANGELES as items 180 look nothing like even a pseudo-monopole magnet." Ex. A ¶ 62 (annotating Fig. 5). "To a POSITA, [items 180] appear to be a fiction without any enabling detail at all either in the specification or in the figure." Id. In contrast, Figure 2 show a magnet that has both a north and south pole. Id. ¶ 63 (annotating Fig. 2). Tellingly, the specification never refers to Figure 2's magnets as "unipolar magnets[.]" Ex. A-2 at 1:48-52.

As the intrinsic and extrinsic evidence confirms, the term "unipolar magnets" of claim 40 is nonsensical and would require an impossibility. *See Synchronoss*, 987 F.3d at 1366–67. Dr. Barrett agrees that the claims, read in light of the specification and the prosecution history, fail to inform a POSITA about the scope of the claimed invention with reasonable clarity. Ex. A ¶¶ 56-66. Thus, they are indefinite.

Plaintiff cannot save the claim's validity by attempting to redraft "unipolar magnets" to be construed as "magnets that each have a face with a single pole." The critical problem with Plaintiff's proposal is that the applicants did not claim "magnets that each have a face with a single pole"; instead, they claimed "unipolar magnets."

It is well-settled that courts should not "redraft" claims—claims must be construed as written. *Chef Am., Inc. v. Lamb—Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004). The Federal Circuit addresses an analogous situation in *Chef America*, where the patent claimed a dough baking method. The claim language required "heating the resulting batter-coated dough to a temperature in the range of about 400° F. to 850° F." *Id.* However, baking dough *to* temperatures of up to 850° F., rather than *at* such temperatures, will result in "something that ... resembles a charcoal briquet." *Id.* at 1373. The Federal Circuit declined to redraft the claim to replace "dough" with "oven" because "[a]s written, the claim unambiguously requires that the dough be heated to a temperature range of 400° F. to 850° F." *Id.* at 1374. The Federal Circuit held the patentee to the claim's clear language, even though it would mean that "the patented process could not perform the function the patentees intended." *Id.* at 1375.

Here, claim 40 of the '055 Patent unambiguously requires an optical pickup actuator comprising, *inter alia*, "*a pair of unipolar magnets* positioned on the base" and "a plurality of coils connected to an electric circuit and interacting with *the unipolar magnets* to create an electromagnet force to move the blade." Regardless of whether this is what the patentee intended, this is the language used. As explained, "unipolar magnets" do not exist, and even if they were theoretically possible, their use in the claim creates an incurable problem.

Whether the applicants might have avoided this problem by drafting claim 40 so that it read "magnets that each have a face with a single pole," as Plaintiff now proposes, is not the question. *See, e.g., Energizer Holdings, Inc. v. Int'l Trade Comm'n*, 275 F. App'x 969, 976 (Fed. Cir. 2008). The applicants did not draft their claim this way. Instead, they wrote a claim that unambiguously calls for "unipolar magnets," and this Court should not rewrite the claim. *Id.*; *Generation II Orthotics Inc. v. Med. Tech. Inc.*, 263 F.3d 1356, 1365 (Fed. Cir. 2001).

For these reasons, the Court should find claim 40 invalid as indefinite based on the "unipolar magnets" limitations and reject Plaintiff's alternative proposed construction.

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